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Cost Benefit Analysis as a Decision Support System in Natural Hazard Management

M. Thöni (1,2), H. Weck-Hannemann (2, 1)

(1) alpS Centre for Natural Hazard Management, Grabenweg 3, 6020 Innsbruck, Austria, thoeni@alps-gmbh.com

(2) University of Innsbruck, Institute of Public Finance, Universitätsstr.15, 6020 Innsbruck, Austria, hannelore.weck@uibk.ac.at

The societal exposure to natural hazards demands for the implementation of an integral risk management that combines active and passive as well as temporary and long term mitigation measures. The therefore needed public and private decisions can be supported by the Cost Benefit Analysis (CBA), a method that systematically compares all possible alternatives on a monetary level and therefore enables an optimal societal outcome, in other words it provides an optimal decision basis.

This paper aims (1) to outline the main characteristics of the CBA as a decision support system in the area of natural hazard management and (2) to compare the CBA with different methods known from natural hazard management, such as the Cost Effectiveness Analysis and the marginal cost criteria. For this reason the emphasis lies on closing the gap between the more technical approaches stemming from civil engineering or natural science and the economic methods dealing with the societal level of decision support systems. These economic approaches and criteria can help to combine the scientific and societal demands for the optimal provision of mitigation measures and simultaneously support the relevant decision maker in finding the most transparent, suitable and efficient solution for the allocation of protective measures against natural hazards.

A critical discussion on the possibilities and boundaries of the method of Cost Benefit Analysis will conclude the paper and underline the necessity to take decision support systems under consideration when working with an integral risk management approach in the area of natural hazards.